



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

D205-634-041
Job Sheet 184818



Part No: D205-634-041

Job Qty: 1 ea

Part Name: Replacement Skidtube with Standard Wearplates Fits LH or RH



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 10/17/18

Job Tracking No:

Due Date: 11/2/18

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: DWG D2580 REV H SHEETS 1,2,3,8 IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ IPP Rev P 10.02.19 per PAR09-043 EC verified by:DD IPP Rev. O 06.02.28 Added paperwork EC IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM IPP Rev:Q 10.12.01 as per chg003 DD ver:EC IPP REV:R 12.01.23 AS PER ECN11-684 VERF:EC IPP REV:S 17.12.08 REMOVE GASKET AS PER INTUITIVE INFO DD VERF:JFS

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		11/2/18	0.00	0.00	Start Up Skidtubes		
110	CNC Bend Skidtubes	1 pcs		11/2/18	0.00	0.65	CNC Bend Skidtube		DD MCG
120	Skidtubes	1 pcs		11/2/18	0.00	2.89	Skidtubes-2		MCG
130	QC	1 pcs		11/2/18	0.00	0.00	QC5		BE
140	Skidtubes	1 pcs		11/2/18	0.00	2.89	Skidtubes-2		DDATF 503
150	QC	1 pcs		11/2/18	0.00	0.00	QC10		38 DAS
160	QC	1 pcs		11/2/18	0.00	0.00	QC5		9-89 38
170	HandFinish	1 pcs		11/2/18	0.00	1.31	HandFinish1		DR 18/11/18
180	Powdercoat	1 pcs		11/2/18	0.00	0.34	Powdercoat1		BR 18-11-18
190	QC	1 pcs		11/2/18	0.00	0.00	QC3		89 68 DAS
200	HandFinish	1 pcs		11/2/18	0.00	1.31	HandFinish4		DAS
210	QC	1 pcs		11/2/18	0.00	0.00	QC5	DAS	NOV 19 2018 68
220	Packaging	1 pcs		11/2/18	0.00	0.00	Packaging3-1	69	NOV 20 2018 89
225	DC	1 pcs		11/2/18	0.00	0.00	DC	9-89	NOV 21 2018
230	QC21-FG	1 Ea		11/2/18	0.00	0.00	QC21	21	NOV 21 2018

Part Op 110 - 1-Bend as per program D2580.C on CNC Bender and Folio 16 2-Cut tubes as per Dwg. D2580 3- scribe batch# in Descriptions: aft end of tube

120 - 1- Deburr ends and remove bending marks 2- Prepare tube for welding as per QSI 004

140 - 1-Weld step D2576 as per Dwg. D2580 and QSI 004 2-Grind welds on step as per Dwg D2580 3- Insert D4202-1 spacer, swage as per QSI002 and trim/ grind flush per QSI002 and dwg. Hold x-bolt with DT9701 Use tube expander 1/2 x17G to start expansion and finish with 1/2 x 18G to achieve dwg dimention. 4-Drill holes for wearplates using DT 8217 & DT8937, 7.40" from most fwd saddle holes (ref only) Open holes to 19/64", adjust stopper not to hit web.Deburr 5-Drill pilot holes for aft cap using DT 8215Open holes to 0.208". Deburr 6-Drill pilot holes for Tow ring using DT8091, open to .640"and Deburr

170 - Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.

180 - START TIME: 8:50 OVEN TEMPERATURE: 300 FINISH TIME: 9:20

200 - 1-Install inserts & wearplates as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates A/R Sikaflex-291 1138943 Sikaflex expire date: 19/03 2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580 3-Inspect for foreign object per QSI 024 4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive A/R Sikaflex-291 1138943 Sikaflex expire date: 19/03

5-Wing Walk as per Dwg D2580 and QSI 005 4.4 Batch: 5098/20

210 - Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																											
Date : _____		Step #: _____		QTY Effective : _____		MRB (QSI042) Approval																																									
Description Work Order Deviation				Disposition																																											
				Completed By																																											
				Lead hand / Supervisor Approval Verification																																											
				QC / QA Coordinator Approval																																											
FAULT CATEGORY																																															
<table border="1"><tr><td>☐</td><td>Power Loss/Surge</td><td>☐</td><td>Positioned Wrong</td></tr><tr><td>☐</td><td>Folio/Program</td><td>☐</td><td>Outside Dimensions</td></tr><tr><td>☐</td><td>Grain</td><td>☐</td><td>Over/Under tolerance</td></tr><tr><td>☐</td><td>Weld</td><td>☐</td><td>Part Incorrect</td></tr><tr><td>☐</td><td>Wrong Stock Pulled</td><td>☐</td><td>Part Lost/Missing</td></tr><tr><td>☐</td><td>Out of Sequence</td><td>☐</td><td>Part Moved</td></tr><tr><td>☐</td><td>Off-set</td><td>☐</td><td>Drawing</td></tr><tr><td>☐</td><td>Mislabeled</td><td>☐</td><td>Finish</td></tr><tr><td>☐</td><td>Fit/Function</td><td>☐</td><td>Misread</td></tr><tr><td>☐</td><td>Misaligned/off center</td><td>☐</td><td>Turning Sequence</td></tr></table>								☐	Power Loss/Surge	☐	Positioned Wrong	☐	Folio/Program	☐	Outside Dimensions	☐	Grain	☐	Over/Under tolerance	☐	Weld	☐	Part Incorrect	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐	Out of Sequence	☐	Part Moved	☐	Off-set	☐	Drawing	☐	Mislabeled	☐	Finish	☐	Fit/Function	☐	Misread	☐	Misaligned/off center	☐	Turning Sequence
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Container No: S120158

Part: D205-634-041

Job No: 184818

Serial No/Batch: S120158

Revision: H

Inspector:

Exp Date:

Instructions: TC STC SH96-88 Issue 3 of 3, FAA STC SR00563NY 08/08/11, EASA STC

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D2580-1	205 Bent Tube	1 Ea (1 ea)	90-Start up Operation	5114855
D2576-3	Step (Machining Detail)	1 Ea (1 ea)	140-Skidtubes	5089827
D4202-1	Spacer	20 Ea (20 ea)	140-Skidtubes	5121423
ALS7-1032-130	Rivnut	50 Ea (50 ea)	200-HandFinish	5084123
AN3-5A	Bolt	2 Ea (2 ea)	200-HandFinish	5095480
AN3C4A	Bolt	50 Ea (50 ea)	200-HandFinish	5095223
D2594-1	Plug	16 Ea (16 ea)	200-HandFinish	5120401
D2594-3	O-Ring	16 Ea (16 ea)	200-HandFinish	5106795
D2855	Cap	1 Ea (1 ea)	200-HandFinish	5066018
D3564-11	Wearplate Aft	1 Ea (1 ea)	200-HandFinish	5089788
D3564-13	Wearpad Fwd	1 Ea (1 ea)	200-HandFinish	5107996
D3564-5	Wearplate Center	1 Ea (1 ea)	200-HandFinish	5107249
D3564-9	Wearplate Fwd	1 Ea (1 ea)	200-HandFinish	5107312
NAS1149C0332R	Washer	50 Ea (50 ea)	200-HandFinish	5089465
NAS1149D0332J	Washer	2 Ea (2 ea)	200-HandFinish	5100407-1

M.U 006499

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D2580-1	1	4	0
140-Skidtubes	D2576-3	1	43	0
	D4202-1	20	157	0
200-HandFinish	ALS7-1032-130	50	1,867	0
	AN3-5A	2	266	0
	AN3C4A	50	2,094	0
	D2594-1	16	40	0
	D2594-3	16	552	0
	D2855	1	45	0
	D3564-11	1	23	0
	D3564-13	1	19	0
	D3564-5	1	14	0
	D3564-9	1	13	0
	NAS1149C0332R	50	3,734	0
	NAS1149D0332J	2	2,171	0

Part Specifications

Specifications could not be found.

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

ITEM	QTY -041	QTY -045	QTY -047	QTY -049	PART NUMBER	DESCRIPTION
1	X				D2580-041	SKIDTUBE ASSEMBLY
2		X			D2580-045	SKIDTUBE ASSEMBLY
3			X		D2580-047	SKIDTUBE ASSEMBLY
4				X	D2580-049	SKIDTUBE ASSEMBLY
20	1	1	1	1	D2500-1-190	EXTRUSION
21			16	16	D2570	BUSHING
22	1	1	1	1	D2570-3	STEP
23		4			D2579	SPACER
24	16	16	8	8	D2594-1	PLUG
25	16	16	8	8	D2594-3	O-RING
26	1	1	1	1	D2596	205 WEB
27	1	1	1	1	D2855	AFT CAP
28	1	1			D3564-5	WEARSHOE
29	1	1			D3564-9	WEARSHOE
30	1	1			D3564-11	WEARSHOE
31	1	1			D3564-13	WEARSHOE
32	20	20	24	24	D4202-1	SPACER
33			1		D4406-041	WEARPLATE ASSEMBLY
34			1		D4406-043	WEARPLATE ASSEMBLY
35				1	D5061-1	FWD WEARPLATE
36				1	D5061-3	AFT WEARPLATE
50	50	50			ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
51	50	50			AN3C4A	BOLT
52	2	2	2	2	AN3-5A	BOLT
53			8	8	AN4-45A	BOLT
54	50	50			NAS1149C0332R	WASHER (AN980C10L)
55	2	2	2	2	NAS1149D0332J	WASHER (AN980JD10L)
56			8	8	MS21042-4	NUT (OR MS21042L4)

GENERAL NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT (-041/-047/-049) GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
POWDER COAT (-045) GREEN SANDTEX (REF 4.3.5.8) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4.
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D2580-041 = 33.7 lbs
D2580-045 = 33.7 lbs
D2580-047 = 45.1 lbs
D2580-049 = 32.0 lbs
- 8) WELDING PER DART QSI 004.
- 9) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 10) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 11) USE DART DRILL TEMPLATE DT8217 & DT8937 ONLY FOR D2580-041/-045 TO LOCATE AND DRILL 20.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTIONS B-B AND F-F (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241-281.
- 12) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES FOR D2580-041/-045 AND 8 PLACES FOR D2580-047/-049)
- 13) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

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ENGINEERING

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SUBJECT TO AMENDMENT

WITHOUT NOTICE
WORK ORDER

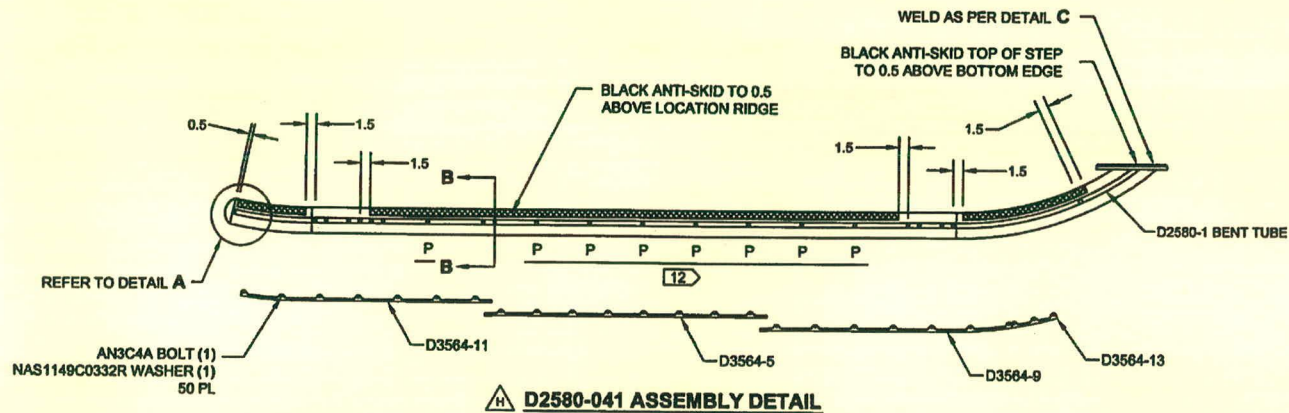
NO. 184818 MJS

18-10-17

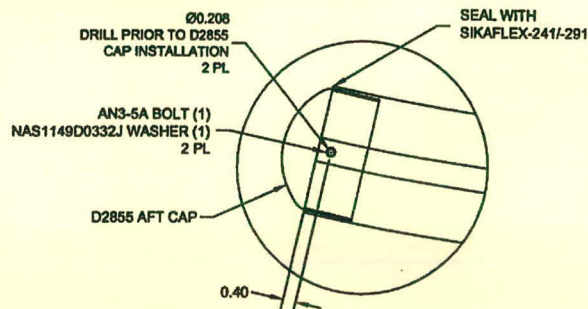
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2017 JUL 05 4
ECN17-569

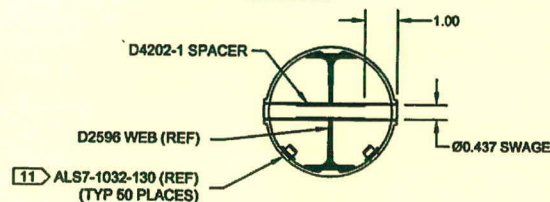
H	SHEET: PL DELETE D3566-1/-5/-13 GASKETS, WEIGHTS UPDATED ACCORDINGLY. SHEETS 2 & 4 PICTORIAL UPDATE FOR REMOVAL OF GASKETS	SAD	17.06.09
G	ADDED -049, -047 WEIGHT UPDATED PER DSI 8598	AJS	14.04.09
F	INCORPORATE DEO D2580-E-1 PER PAR12-218	DC	13.06.20
E	ADD D2580-047 (ZN C4-7) AND D2580-7 (ZN B3-8); INCLUDED DEO D2580-D-1; REFORMATTED DRAWING TO CURRENT STANDARDS; DT8217 & DT8937 WAS TD2577-205 (ZN C4-1)	RF	11.06.21
D	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/ 9183	PH	07.04.06
C	REDRAWN, INCLUDED DEO 9094/ 9097	CP	06.06.26
B	AS MANUFACTURED	DS	06.12.02
A	NEW ISSUE	DS	06.06.16
REV.	DESCRIPTION	BY	DATE
DESIGN	DS	DART AEROSPACE LTD HAWKESSBURY, ONTARIO, CANADA	
DRAWN	SAD		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. H
MFG. APPR.	<i>[Signature]</i>	D2580	SHEET 1 OF 9
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	205 SKIDTUBE ASSEMBLY	NTS
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DETAIL A
SCALE 5X

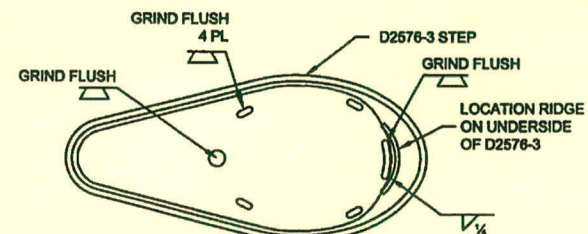


SECTION B-B
SCALE 5X



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. INSERT D4202-1 SPACER (20 PLACES)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

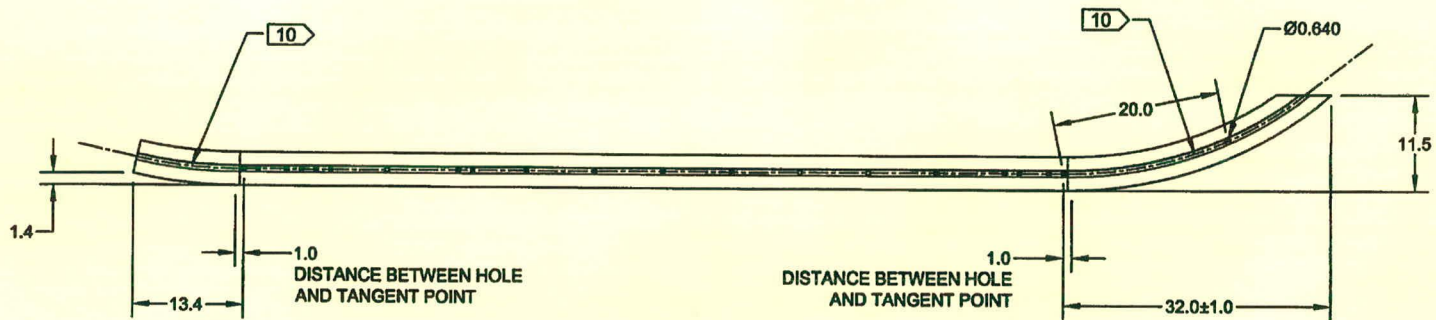
DETAIL C
SCALE 5X



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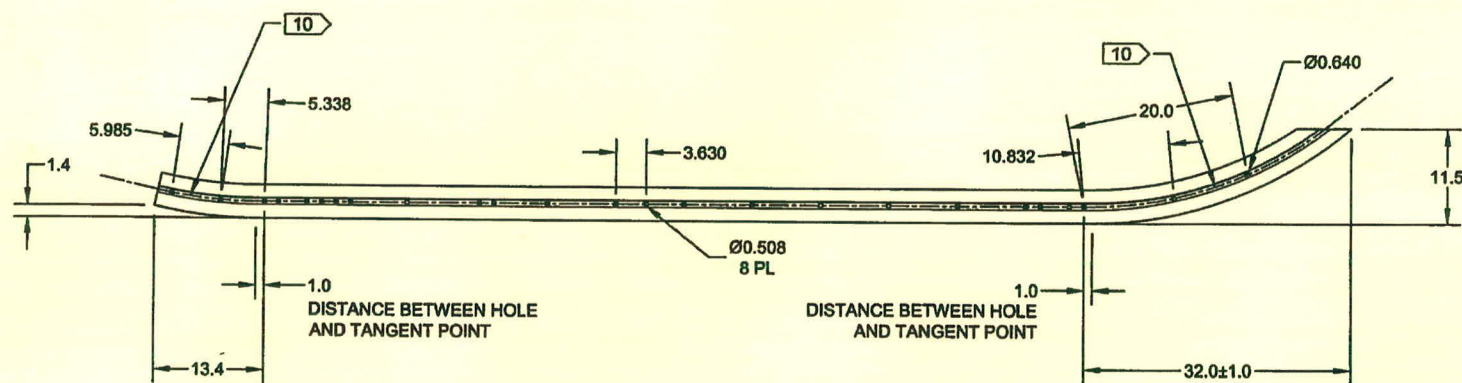
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DRAWN	SAD		
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MFG. APPR.	<i>[Signature]</i>		SHEET 2 OF 9
APPROVED	<i>[Signature]</i>	TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS
DE APPR.	<i>[Signature]</i>		
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D2580-1 BENT TUBE
(MAKE FROM D2580-101 TUBE)

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2017 JUL 05 4P

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DRAWN	SAD		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. H
MFG. APPR.	<i>[Signature]</i>	D2580	SHEET 3 OF 9
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	205 SKIDTUBE ASSEMBLY	NTS
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D2580-7 BENT TUBE
(MAKE FROM D2580-101 TUBE)

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2017 JUL 05 47

DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	SAD		
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MFG. APPR.	<i>[Signature]</i>		SHEET 8 OF 9
APPROVED	<i>[Signature]</i>	TITLE	SCALE
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